UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,264	10/19/2004	Thomas Margaria	04179	4304

23338 7590 06/14/2006

DENNISON, SCHULTZ, DOUGHERTY & MACDONALD
1727 KING STREET
SUITE 105
ALEXANDRIA, VA 22314

EXAMINER	
MAI, NGOCLAN THI	

ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/511,264	MARGARIA, THOMAS	
	Examiner	Art Unit	
	Ngoclan T. Mai	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/19/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hilaire et al. (U.S. Patent No. 4,432,793) in view of Gorgerino et al. (U.S. Patent No. 4,290,805), Williamson (U.S. Patent No. 5,580,401).

Hilaire et al disclose a ferroalloy for inoculation of cast metal comprising from 0.005 to 3% by weight of at least one metal of rare earth group and from 0.05 to 3% by weight of at least one of element taken from the group consisting of Bi, Pb and Sb, the remainder being essentially silicon and the balance Fe, col. 2, lines 11-19. Particularly Hilaire et al teach a ferroalloy comprising 0.49% Bi, 0.59% Ca, 0.23% Al, 0.44% rare earths, 71% Si and the balance essentially of Fe, col. 3, lines 10-13.

The difference between the claim and Hilaire et al is that Hilaire et al do not specifically teach lanthanum accounts for more than 90% of rare earth metals used in the alloy.

Gorgerino et al. disclose to reduce certain defects of the iron-based alloy such as pinholes, cavities or shrinkage holes and carbides in the spheroidal graphite cast-iron,

lanthanum-containing inoculating alloys with lanthanum-to-rare earth (except lanthanum) weight ratio at least higher than 10/1, col. 1, lines 13-25.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made that the inoculating alloy of Hilaire et al. includes lanthanum as the rare earth metal and in the in the amount higher than 90% of the rare earth metal as taught by Gorgerino et al. because employing inoculating alloy containing lanthanum in the disclosed amount in the iron-based alloy production would reduce certain defects as noted above.

As for claim 3, Hilaire et al disclose inoculating alloy having Bi ranging from 0.49 to 1.45, see alloy B and D.

As for claim 4 Hilaire et al disclose the inoculating alloy can contain 0.74% rare earth, see Hilaire et al, claim 7.

Regarding claims 5 and 6, while Hilaire et al do not teach employing aluminum in the amount as recited, Gorgerino et al teach inoculating alloy containing Al in the amount as claimed can be used together with lanthanum as the rare earth metal for producing iron-based alloys, col. 9, lines 43-48. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made that art to include aluminum in the amount disclosed by Gorgerino et al be used together with lanthanum in the inoculating alloy taught by Hilaire et al for the production of iron-based alloy having the noted improvement.

As for claim 8-10, the differences between the claims and Hilaire et al in combination with Gorgerino et al are that Hilaire et al do not teach the form of the inoculating alloy as recited in the claims. However it is conventionally known in the art to form inoculating alloy into chunks, pellets, i.e., slugs, powder or other granulated form for in the mold inoculating, see Williamson, col. 7, lines 6-13. Thus forming the inoculating alloy taught by Hilaire et al in view of Gorgerino et al. is such form for in the mold treatment is well within the level of one skill in the art and would have been obvious.

As for claim 12, while Hilaire et al in view of Gorgerino et al do not teaching the composition is obtained by a mix of alloy powders with different compositions, there is no patentable distinction or difference between the claimed alloy and that taught by the combination of Hilaire et al and Gorgerino et al. Thus even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ964, 966 (Fed. Cir. 1985).

4. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hilaire et al. (U.S. Patent No. 4,432,793) in view of Gorgerino et al and Craig et al. (US Publ. 2003/0126946)

The difference between the claim and Hilaire et al. in view of Gorgerino et al. is that the references do not teach the powder grain size with the size-grading fraction as recited in the claim. Craig et al disclose an inoculation pellet for efficiently, and uniformly inoculate molten iron over a wide range of approach velocity wherein the pellet is obtained by agglomeration of a powdered inoculating alloy having the powder grain size with the size-grading fraction as recited, see [0023]. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the inoculating alloy of Hilaire et al in view of Gorgerino et al. into pellet having the powder grain size with the size grading fraction as disclosed by Craig et al. for effectively and efficiently inoculating molten iron.

5. Claims 1-4, 7-8, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Margaria et al (U.S. Patent No. 5,733,502) in view of Gorgerino et al. (U.S. Patent No. 4,290,805).

Margaria et al disclose a ferrosilicon-based ferroalloy for inoculation of irons containing by weight from 0.005 to 3% bismuth, lead and/or antimony, 0.005 to 3% rare earths, 0.3 to 3% calcium. Note that the limitation "possibly up to 5% of aluminum" includes zero percent.

The difference between the claim and Margaria et al is that Margaria et al do not specifically teach lanthanum accounts for more than 90% of rare earth metals used in the alloy.

Gorgerino et al. disclose to reduce certain defects of the iron-based alloy such as pinholes, cavities or shrinkage holes and carbides in the spheroidal graphite cast-iron, lanthanum-containing inoculating alloys with lanthanum-to-rare earth (except lanthanum) weight ratio at least higher than 10/1, col. 1, lines 13-25.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made that the inoculating alloy of Margaria et al. includes lanthanum as the rare earth metal and in the in the amount higher than 90% of the rare earth metal as taught by Gorgerino et al. because employing inoculating alloy containing lanthanum in the disclosed amount in the iron-based alloy production would reduce certain defects as noted above.

As for claim 12, while Margaria et al in view of Gorgerino et al do not teaching the composition is obtained by a mix of alloy powders with different compositions, there is no patentable distinction or difference between the claimed alloy and that taught by the combination of Margaria et al and Gorgerino et al. Thus even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ964, 966 (Fed. Cir. 1985).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoclan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 9:30-6:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ngoclan T. Mai
Primary Examiner
Art Unit 1742

n.m.